

WaterLine

A publication about Ontario's water and wastewater industry.

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The mission to reduce energy costs in water/wastewater facilities

Ontario may have vast supplies of fresh water but as energy costs rise, municipalities are becoming increasingly aware that accessing and treating it is anything but free

Of all municipally owned and operated systems, the largest and most energy demanding are water and wastewater facilities. On average, these facilities are directly responsible for up to 50% of a community's energy use. And in an era of rising operating costs and growing environmental concerns, industry professionals continue to search for ways to reduce that demand and the costs associated with it.

Perhaps the most obvious benefits of efficient energy use in water and wastewater facilities are the reduction of greenhouse gases and lower operating costs. But those efficiencies, in turn, help to free up funding for training, hiring additional staff and financing capital improvements – all of which can positively impact water and effluent quality and compliance rates.

The 'secret' to reducing energy usage is not so much a secret as it is a disciplined, multi-step process of changing behaviours

and attitudes. For example, educating the public about the 'real' costs of water and tips on reducing usage has been shown to significantly impact the energy demands related to treating and moving it. At the same time, a vigorous program of process evaluation and optimization in water and wastewater facilities has proven highly successful in identifying efficiencies that, when captured, can generate significant savings – not just in energy but also in chemical costs and capital cost avoidance.

"With this needed upgrade to our aeration system, the Township of Black River-Matheson has been able to turn our wastewater treatment plant into a much more energy-efficient one," says Heather Smith, Chief Administrative Officer for the Township. "Indications are that hydro savings will be as much as 30% for the entire facility. In order to achieve these numbers, a 60% efficiency had to be realized for the aeration system alone, and that translates directly into savings for our rate payers."

Indeed, many of the technologies and management practices required to meet energy reduction goals in the water and wastewater industry already exist. And new, improved and more innovative solutions are continually being developed.

For operating authorities, this can be both a challenge and an opportunity to provide improved value to system owners. Glen Lang, Manager of Compliance for OCWA says, "It's standard industry procedure to upgrade equipment and monitoring devices as the efficiency of what's available improves, but when it comes to managing energy it has become increasingly important to focus on updating behaviours and internal processes as well."



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From water... light

A message from
Robin Kind, General Counsel/Chair,
OCWA Corporate Social
Responsibility Team

As this is the first opportunity we've had to connect with many of you in 2012, I would like to wish all of our readers a happy and healthy New Year on behalf of all of us here at OCWA. 2012 promises to be an exciting year, with new innovations and emerging technologies being explored across the water and wastewater industry – both locally and on an International level.

In fact, as I was flipping through a recent issue of Water Canada the other day, I stumbled across a great little story about a video that had recently gone viral. The video was about a sustainable lighting project in the Philippines. An organization called the MyShelter Foundation is spearheading the project (called 'Liter of Light'), which provides free, safe, environmentally-friendly daytime lighting to homes and businesses using something called a Solar Bottle Bulb.

This story had such an impact on me that I decided to view the video and

research the organization for myself. I'm glad I did. It's an inspiring story about how people are using old pop bottles, filtered water and a bit of chlorine to provide light in a country where many families still live in the dark. Indeed, millions in the region are without electricity and there are large numbers of fire-related incidents due to faulty wiring.

The 'bulbs', which can be installed in the roofs of houses and businesses, give off light equivalent to a 55-watt electric lamp as the

water inside the bottle refracts sunlight and other exterior light. The Solar Bottle Bulb was originally designed by students at the Massachusetts Institute of Technology. And the light produced by these Solar Bottle Bulbs is truly life-changing for the people who are fortunate enough to receive them. The MyShelter Foundation has a goal of brighten up to one million homes in the Philippines by 2012.

It's truly amazing when you think about how many families are being given the gift of light because of a little old fashioned ingenuity, some discarded plastic bottles, a touch of chlorine and, of course, water.



**TURNING WASTE PLASTIC BOTTLES
INTO SOLAR BULBS**

Visit the web site at www.isanglitrongliwanag.org or view the **official video**.

FCM supports energy analysis for water and wastewater facilities

On November 30, 2011 Berry Vrbancic, President of the Federation of Canadian Municipalities (FCM) and Lois Brown, Member of Parliament for Newmarket-Aurora, announced a *Green Municipal Fund* grant of approximately \$70,000 to identify and evaluate process energy efficiency opportunities at selected water and wastewater facilities in The Regional Municipality of York. An FCM-funded study found that energy efficiency upgrades can generate electricity savings

of 5% to 25% and that having pumps and their associated motors, aeration blower controls, plumbing and electrical equipment in prime operating condition can save thousands of kilowatt hours per year.

"Water and wastewater infrastructure accounts for a significant portion of our municipality's electricity usage," says York Region Chairman and CEO Bill Fisch. "Funding received from the

Federation of Canadian Municipalities, through the Green Municipal Fund, has supported the Energy Analysis of Water and Wastewater Facilities that will ultimately result in reduced energy demand and costs while improving operational efficiency."

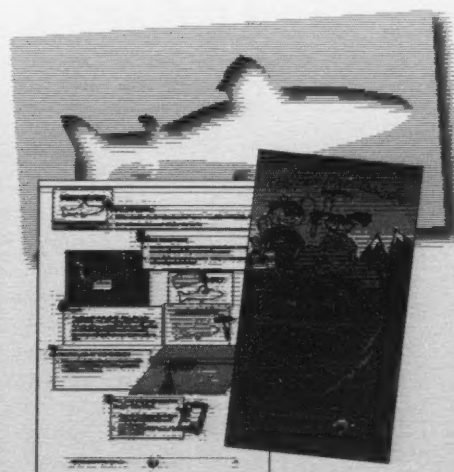
FCM Press Release (edited)
– November 30, 2011

Scout group receives \$5,000 grant for water-minded project

Ontario's waterways are a bit cleaner thanks to some community-minded scouts, some yellow paint and a lot of hard work. The 1st Binbrook Scouts were recently recognized with a \$5,000 grant from RBC for their 'Follow the Yellow Fish Road' project. As part of the initiative, the scouts painted yellow fish next to storm drains in Haldimand County. The paintings are meant to remind residents that the storm drains connect directly to local streams, rivers and lakes and that

anything that goes down them (e.g. oil, soap, fertilizer, pet waste, etc.) goes into local waterways untreated.

The group described the project as something that keeps on giving, since the yellow fish will be visible for years to come, serving as a quiet, constant reminder for residents to protect the local waterways. The 1st Binbrook Scouts are looking to partner with other Scouting groups to help expand the scope of the project.



Ottawa to assess its water mains for risk of failure



The City of Ottawa is conducting a 'vulnerability study' to assess the condition of its major water mains in order to rank sections that are at high risk of failing. The initiative was launched in 2011 after a large water main failure that resulted in a two-month ban on outdoor water use. The results of the City's review will also be used as part

of a water main management strategy that will include structural inspections based on assessing the highest risk feeder mains first. Approximately 80,000 residents were affected by the 2011 water-use ban. An investigation revealed the water main failure was the result of road salt leaking into concrete and causing corrosion.

Winter Driving TIPS Courtesy of OCWA's Health and Safety Team

In providing essential water and wastewater service to over 175 clients across the province, OCWA's employees must drive in various weather conditions. To ensure OCWA staff is prepared to deal with the elements, OCWA's Occupational Health and Safety System includes a topic on Winter Driving Safety that includes general information useful to anyone getting behind the wheel this time of year. Here are a few winter driving tips courtesy of OCWA's Health and Safety team:

- Ensure your vehicle is equipped with a vehicle safety kit. (See sidebar for details.)
- Always exercise caution and drive according to conditions.
- Plan extra time to get to your destinations.
- Before venturing out, obtain a weather forecast for the area of intended travel to plan activities that avoid adverse weather whenever possible.
- Dress appropriately and be prepared for changing weather conditions.
- Watch for the flashing lights of snow and ice control vehicles. When approaching them from behind, slow down, stay back, and be patient.

On behalf of all of us here at OCWA, we wish you safe travels throughout the winter season. Remember, Safety First!

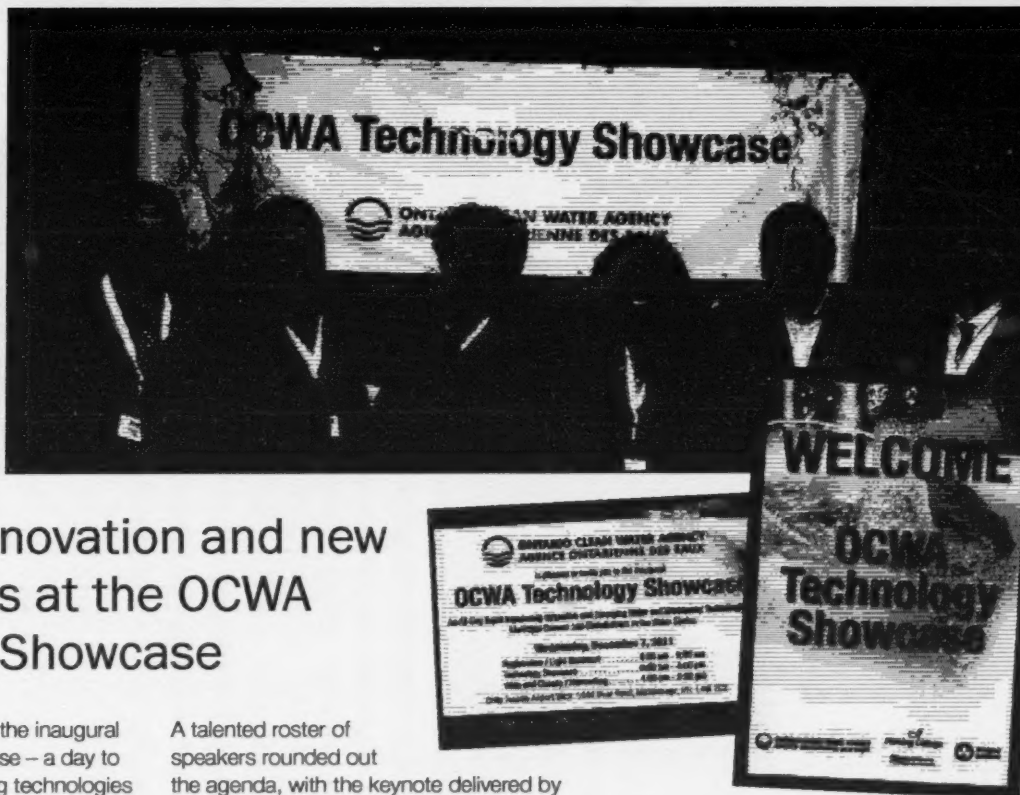
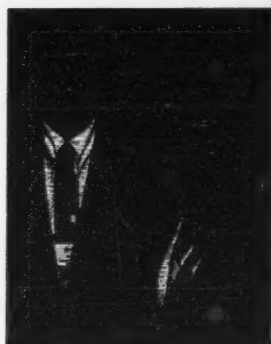
OCWA'S VEHICLE

SAFETY KIT INCLUDES:

- | | | |
|--------------------------------------|-----------------------------------|------------------------|
| • First aid kit | • Backup reflector | • Spare tire |
| • Flashlight with extra batteries | • Candles and water proof matches | • Wheel chock |
| • Road flare or reflective triangles | • Ice scraper and snow brush | • Survival blanket |
| | • Floor mats and shoe | • Roadside safety vest |
| | • First aid kit | • Rain coat and |
| | | • Work gloves |

Moncton city council says 'no' to fluoride in water

Moncton, New Brunswick is the latest Canadian city to decide to stop adding fluoride to its drinking water. The City's decision was hardly unanimous, however, with councillors voting 7 to 4 to stop fluoridating the municipality's water supply. "There are many municipalities that have no fluoride in their water and, to my knowledge, there are no major issues," said Councillor Paul Pellerin. Those councillors in favour of keeping fluoride in the local water supply made the point that every health and dental association in North America recommends adding fluoride to drinking water because it is safe and effective. The City will begin phasing out its use of fluoride immediately.



Exploring innovation and new technologies at the OCWA Technology Showcase

December 7, 2011 marked the inaugural OCWA Technology Showcase – a day to introduce new and emerging technologies to Municipal representatives and other stakeholders within the water and wastewater industry. Held at the Delta Toronto Airport West, the day brought together 110 guests from all areas of the industry.

Fifteen exhibitors set up table-top displays around the perimeter of the room to showcase their technologies and services. They also had the opportunity to participate in one of three "Pitch Sessions" moderated by John Neate from Strategies for Change. Each company had five minutes to introduce their innovative service or technology and then receive feedback from a panel of representatives from the municipal, financial, industry and operational/engineering side.

"When the *Water Opportunities Act* was passed, it brought clear focus to the need for developing and piloting new technologies and encouraging smarter water use within the province," says Jane Pagel, President and CEO of OCWA. "We are happy to support the Act by facilitating the testing and uptake of some of these new technologies. The Showcase provided an opportunity for members of the industry to get together to gain and share knowledge that will hopefully lead to future business opportunities."

A talented roster of speakers rounded out the agenda, with the keynote delivered by Booky Oren, Chairman and CEO, Booky Oren Global Water Technologies and Chairman of WATEC Israel. Oren spoke about the "Global Water Partnership" and the need for partnerships and cooperation on an international level within the water industry. Other speakers included Brent Wootton, Fleming College, Centre for Alternative Wastewater Treatment; Paul Nieweglowski, Ministry of the Environment; George Cadete, Ministry of Economic Development and Innovation; Zoltan Tompa, Sustainable Development Technology Canada; Usha Srinivasan, MaRS Discovery District; and Sandra Odendahl, RBC.

Many thanks to our sponsors, Fleming College, Center for Alternative Wastewater Treatment and the Natural Sciences and Engineering Research Council of Canada (NSERC). Many thanks as well to XPV Capital Corporation, for sponsoring the networking wine and cheese. The feedback from the session was overwhelmingly positive, with the majority of attendees saying they would attend a future such event.

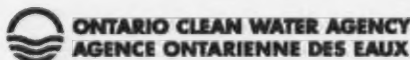
"I do hope that OCWA makes this an annual event," says Rodney Bouchard, General Manager, Union Water Supply

Photos: Left (l to r): Keynote Speaker Booky Oren with OCWA President and CEO, Jane Pagel

Right (l to r): Some of the OCWA Technology Showcase panelists: Andy Valickis, OCWA; Richard Junkin, OCWA; Michelle Hendry, City of Kawartha Lakes; Sandra Odendahl, RBC; Zoltan Tompa, Sustainable Development Technology Canada; John Neate (Moderator), Strategies for Change

System. "This technology showcase demonstrates OCWA's commitment to ensuring that its municipal water and wastewater clients are on the forefront of water and wastewater technologies and innovations, and thus also demonstrates its commitment to the industry as a whole and to public health in regards to drinking water and wastewater safety."

Thank you to OCWA's planning committee, Massimo Pontone and Amy Lane, for organizing the event and of course a very special thank you to all those who participated in the OCWA Technology Showcase – we are already thinking about plans for next year!



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